fresh water bodies of the Oriental region. Four species of the genus *Homaloptera* are found in India, Myanmar and Thailand. The present species was originally known from Myanmar and Thailand. The occurence of *H. modesta* in Namyak stream might be due to its connection with Chindwin Irrawady system of drainage. This report extends its distribution to the Chindwin river system of Manipur, India.

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25. FINAL INSTAR LARVA OF *ISCHNURA AURORA AURORA* (BRAUER) (ZYGOPTERA: COENAGRIIDAE)

(*With seven text-figures*)

The final instar larvae of two species of Genus *Ischnura* Charpentier, 1840 are already described from India (Kumar 1973). Literature on Indian dragonflies (Kumar 1973, 1985; Kumar and Prasad 1985) revealed lack of information on the larva of *Ischnura aurora aurora* (Brauer, 1865). Therefore I studied the morphology of larva of *I. aurora aurora.*

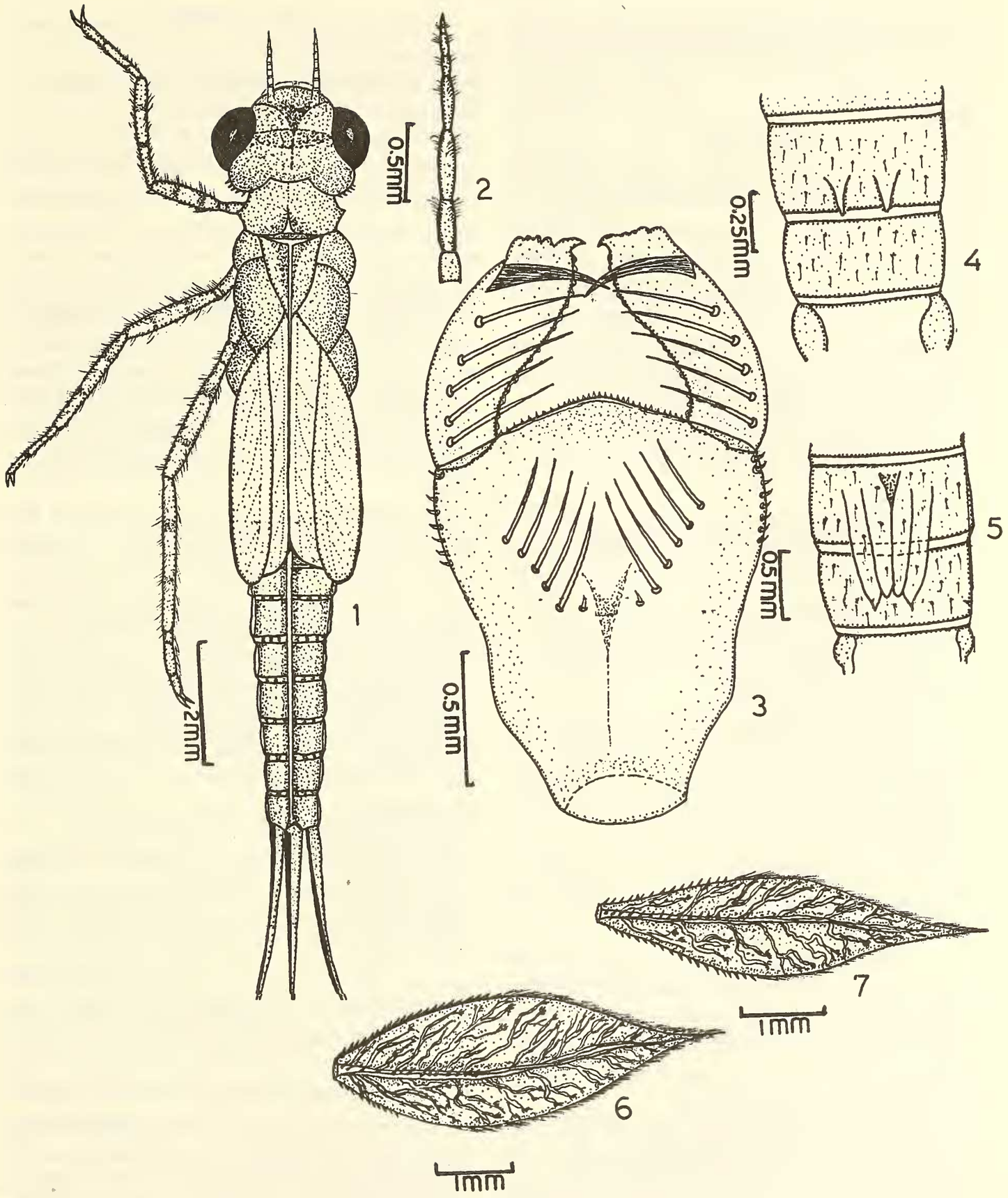
Material: India: M.P., Sagar, at 23° 52' N and 78° 45' E, Gwalla mohalla village, 10.ix.1982 (15 males, 6 females) from a narrow hill stream, Dharmashri village, 18.ix.1982 (6 males, 3 females) from a narrow stream. All larvae were reared in the laboratory.

Description: Total length (antenna excluded) 13.50 - 15.50 mm; X 14.42 mm; width of head 2.80 - 3.05 X 2.88 mm; all measurements are the mean of 30 larvae. **Colouration**: Males greenish yellow and females yellow mottled with black granules. Ventral surface brown in male and female. Caudal lamellae pale brown.

Head: (Fig. 1) Triangular with round anterior margin and deeply concave posterior margin. Lateral sides bulging out and provided with dark brown setae.

Antenna: (Fig. 2) filiform; measurements (in mm) of segments being 0.17, 0.28, 0.42, 0.26, 0.18, 0.15 and 0.10, total length 1.56 mm. Eyes steel grey, 1.0 mm x 0.62 mm. Ocelli not visible.

Labium: (Fig. 3) extending posteriorly up to the fore coxae. Prementum as long as wide. Lateral margins of prementum with a few spiniform setae. Distal margin of prementum convex and provided with a few small claviform setae. Premental setae formula 5_1 & ^{15}, palpal setae 5 & 5, distal margin of palpus divided into



Figs. 1-7: *Ischnura aurora aurora* (Brauer) structural features of the final instar larva:
1. Final instar larva; 2. Antenna; 3. Labium; 4. Male gonapophyses; 5. Female gonapophyses;
6. Median caudal lamella; 7. Lateral caudal lamella.

two lobes, outer lobe bearing 4 distinct teeth, while the inner terminates in a sharp end-hook. Movable hook stout and half the length of palpus.

Thorax: Collarshaped. Each wing bud measures 3.40 mm in length; hind-wing buds extending posteriorly to the middle of the 4th abdominal segment. Legs with two dark brown bands each on femur and tibial region; the fore, mid and hind legs measuring 3.59 mm, 4.86 mm and 6.00 mm respectively. Tibial comb mainly comprised of scattered tridentate setae and some long setae. Tarsi three segmented, with double row of pectinate setae.

Abdomen: Cylindrical with middorsal strip pale brown, extending through the length of abdomen.

Gonapophyses: (Fig. 4 & 5) in male a pair of conical processes present ventrally on the posterior region of 9th abdominal segment; in female comprising two pairs of long valvular processes arising ventrally from posterior margin of 8th abdominal segment. Outer and inner valves of the same length.

Caudal lamellae: Leaf-like, duplex and sub-nodate type in which nodi indistinct and indicated by termination point of antenodal spines,with apices ending in narrow process. Tracheation uniformly rich in median and lateral lamellae. Axial tracheal trunk prominent, a number of secondary and tertiary branches arise from this trunk.

Median lamella: (Fig. 6) 5.25 mm long and 1.50 mm wide, narrow proximally but broad in the middle. Dorsal antenodal region 1.75 mm long with 16-20 setae; Ventral antenodal region 0.75 mm long, bearing 10-13 setae. Median tracheal setae number 13-17.

Lateral lamella: (Fig. 7) 4.75 mm long, 1.50 mm wide. Dorsal antenodal region 0.85 mm, having 12-14 spines; Ventral antenodal region 1.90 mm long, with 17-23 spines. Median tracheal setae 17-20 in number.

Biology: The larvae which are found in narrow slow running streams remain attached to submerged vegetation. These streams have larval populations of *Pseudagrion rubricips* Selys, *Ceriagrion coromandelianum* (Fabricius) and *Copera marginipes* (Rambur).

Oviposition and early instars were observed in July, September and October. The March, April and September larval population mainly consists of final instar larvae. Emergence occurs twice a year; once in early summer (April) and again towards the decline of the monsoon (September, October). The larval biotopes, narrow streams, dry up in May and June. Adults were observed on wing during this period near the streams. This species is bivoltine with one monsoon brood (July to September) and one winter brood (October to March, April) at Sagar, (M.P).

Diagnosis: Kumar (1973) described the final instar larva of *Ischnura delicata* (Hagen) and *Ischnura senegalensis* (Rambur) from Dun Valley, Dehradun, India. The final instar larva of *I. aurora aurora* can easily be differentiated from that of *I. delicata* and *I. senegalensis* by the body length, head width, palpal setae and premental setae. The body length, head width, palpal setae and premental setae of final instar larva of *I. delicata* and *I. senegalensis* are 12.20 mm, 2.10 mm, 4 & 4, 4 & 4, and 13.30 mm, 2.15 mm, 5 & 5, 3_1 & ^{13} respectively. In the present study the body length, head width, palpal and premental setae of final instar larva of *I. aurora aurora* were found to be 14.42 mm, 2.88 mm, 5 & 5 and 5_1 & ^{15} respectively. The larvae of *I. senegalensis* which are also found in Sagar lake, Sagar (Suri Babu 1986) are similar to the description of Kumar (1973).

Kumar (1973) found larvae of *I. delicata* in slow running streams, weedy banks of large rivers and in temporary monsoon ponds. He found larvae of *I. senegalensis* in slow running streams, but larvae of *I. aurora aurora* were never observed in still water bodies in Sagar (M.P) However, Lieftinck *et al.* (1984) observed these larve in ponds in Taiwan.

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26. OCCURRENCE OF BEEHOLE BORER *XYLEUTES LEUCONOTUS* (*DUOMITUS LEUCONOTUS*) WALKER, FAMILY COSSIDAE

Beeson (1941) has described *Xyleutes leuconotus* as a pest of ornamental *Cassia* and has given its distribution as Ceylon, India, Burma and China. However, very little is known about its status in India. Hampson (1892) noted its distribution in Simla, Sikkim, Calcutta and Ceylon.

On 6th September, 1997 Mr Naik, a BNHS member, brought a female of this moth, which was attracted to light in a residential area near Thane creek. The female laid several thousand tiny creamish eggs, but none of them hatched.

From the data it appears that the moths emerge in August/September. Mostly they are pests of *Cassia* plants and besides Mumbai (Maharashtra) they are also found in Gujarat (Ahwa Dang, Surat).

According to Barlow (1982), the distribution of *Xyleutes leuconotus* moth is northern India to Malaysia and Indonesia.

TABLE 1
COLLECTION DATA OF THE MOTH SPECIMENS PRESENT IN THE BNHS COLLECTION

Place	Date	Collector
Museum garden on *Cassia* tree Mumbai	17.viii.1946	G. Noguera
Mumbai	27.viii.1938	—
Bandra, Mumbai on *Cassia*	16.ix.1965	D.E. Reuben
Bandra, Mumbai	8.ix.1968	-do-
Ahwa Dang, Surat Gujarat.	?.viii.1962	Rev. E. M. Shull

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